ZEITSCHRIFT FÜR MATHEMATISCHEN UND NATURWISSENSCHAFTLICHEN UNTERRICHT, vol. 52, nos. 11–12, November 30, 1921: "Ueber ein Verfahren zur Veranschaulichung der Konvergenz unendlicher Reihen" by E. Dintzl, 249–253; "Direkte Herleitung des relativistischen Dopplerprinzips und der zeitlichen Lorentztransformation aus den nichtrelativistischen Gleichungen Dopplers" by H. Meurer, 254–257; "Beweis des pythagoreischen Lehrsatzes mit Hilfe des Satzes von Menelaus" by J. Salachowski, 257–258; "Ein Modell zu den Sätzen des Ceva und des Menelaos" by E. Lipken, 258–259; "Die Simpsonsche Regel" by A. Witting, 259 [An especially simple derivation of the rule]; "Ueber drei stereometrische Aufgaben" by W. Gaedecke, 260–261; "Ein Nomogramm für die Zinseszinsformel" by P. Hauck, 261–263; "Ueber die mathematischen Bezeichnungen im Unterricht" by W. Lietzmann, 266–267 [Synopsis of the recommendations of the (American) National Committee on Mathematical Requirements, concerning this topic]; "Bücherbesprechungen," 269–282—Volume 53, nos. 1–2, January 20, 1922: "Zur Entwicklung der mathematischen Erfindungsgabe" by P. Maennchen, 2–7; "Der Schenkel-Transversalensatz" by H. Dörrie, 8–14; "Herleitung der Lorentztransformation eines Längenabschnittes durch Vergleich der relativistischen mit den nichtrelativistischen Gleichungen des Dopplerprinzips" by H. Meurer, 15–17; "Winkel an Gleichlaufenden" by C. H. Tietjen, 17–18; "Die Winkelmessung des Artilleristen" by P. Lötzbeyer, 18–20; "Zur Konstruktion des Apollonischen Kreises" by E. Lipken, 20; "Dreikant und Polarkant" by C. Stengel, 21–22; "Zur Berechnung der Kugelfläche" by A. Czwalina, 22–23; "Der Krümmungskreis in einem Punkte einer Ellipse" by G. Diem, 23–25; "Aufgaben-Repertorium," 25–31; "Die Internationale Mathematische Unterrichtskommission" by W. Lietzmann, 31–33; "Die Mathematikerversammlung in Jena 1921" by W. Lietzmann, 34–35; "Bücherbesprechungen," 41–51—Nos. 3–4, March 15: "Die Erbteilungsaufgaben bei Muhammed ibn Musa Alchwarazmi" by H. Wieleitner, 57–67; "Die Spiegelung als primitiver Begriff im Unterricht" by H. Willers, 68–77; "Die Ermittlung der molekularen Grössenordnung im Unterricht" by H. Hermann, 77–81; "Ein Paradoxon der Gravitation" by H. Teege, 81–84; "Eine einfache Wahrscheinlichkeitsaufgabe die auf die Zahl e führt" by W. Simons, 84–85; "Bücherbesprechungen," 87–95—Nos. 5–6, May 12: "Die Spiegelung als primitiver Begriff im Unterricht" (conclusion) by H. Willers, 109–119; "Verallgemeinerung der Cardanischen Formel" by K. Siemon, 120–126; "Die verschiedenen Methoden zur Lösung von Aufgaben der darstellenden Geometrie bei ungünstigen Lageverhältnissen" by A. Baruch, 126–133; "Die Cheopspyramide als Fundgrube mathematischer Schulaufgaben" by M. Zacharias, 133–135; "Aufgaben-Repertorium," 136–139; "Bücherbesprechungen," 146–150—Nos. 7–8, July 20: "Die Stellung der Mechanik zwischen Physik und Mathematik" by W. Lietzmann, 153–161; "Die verschiedenen Methoden zur Lösung von Aufgaben der darstellenden Geometrie bei ungünstigen Lageverhältnissen" (concluded) by A. Baruch, 161–168; "Ableitung der sphärisch trigonometrischen Formeln aus der darstellenden Geometrie" by A. Launer, 168–171; "Bandknoten" by W. Bastiné, 172–174; "Beitrag zur Behandlung der Sätze über die Winkel am Kreis" by W. König, 174–175; "Bücherbesprechungen," 183–189.

UNDERGRADUATE MATHEMATICS CLUBS.

All reports of club activities should be sent to E. L. DODD, Williams College, Williamstown, Mass.

CLUB ACTIVITIES.

THE GRINNELL COLLEGE MATHEMATICS CLUB, Grinnell, Ia.
[*1922*, 78.]

The following meetings were held in 1921–1922:

September 22, 1921: Business meeting.

October 4: President's inaugural address by Robert Hannelly '23; "History of mathematical organization" by Professor R. B. McClenon.

October 18: "Trisection of an angle" by Elizabeth Pace '22.

November 1: "Applications of arithmetic" by Burton Jones '23; "Einstein, his life and work" by Margaret Divelbess '23.

November 15: "Report of the Committee on Mathematical Requirements" by Professor O. W. Albert; "Russian peasant method of multiplication" by Ruth Boyce '22.

December 6: "Vibrating strings" by Raymond Weigen '22.

February 14, 1922: "Mathematical requirements for agricultural study" by Louise Pinkerton '22; "Leibnitz" by Robert Hannelly '23.

February 28: "Theorems about circles" by Vera Kreger '24; "Properties of a triangle" by Professor H. Leypolt.

March 14: "Repeating decimals" by Burton Jones '23; "Mathematical recreations" by Ethel Warnick '24.

April 25: "Map projections" by Robert Atwater '23; "Permutations and combinations" by Robert Hannelly '23.

May 9: "Nine-point circle" by Marian Piersol '24; "Fourth dimension" by Ferrell Rodgers '24; "Composition of an atom" by Dr. Lloyd Taylor of the Department of Physics, University of Chicago.

May 23: "Life and work of Descartes" by Evelyn Forthun '24; "Work of Newton" by Harold Armstrong '24.

June 1: Picnic supper at the home of Professor McClenon. The following officers were elected for the year 1922–1923: President, Burton Jones '23; vice-president, Beulah Mott '24; secretary-treasurer, Edwin Kingery '24.

THE MATHEMATICS CLUB OF NORTHWESTERN UNIVERSITY, Evanston, Ill.
[*1919*, 363.]

The following officers were elected for the first semester of 1921–1922: Laura Hill, president; James Bronnenberg, vice-president; Mildred Giesecke, secretary; Lawrence Fenner, treasurer; Dr. H. B. Curtis, faculty adviser.

During the first semester the following addresses were delivered: "Descartes' rule of signs" by Professor D. R. Curtiss; "Conformal representation" by Dr. Curtis, instructor; "Least squares" by Laura Hill; "Coördinate systems" by Professor E. J. Moulton; "The measurement of the earth" by Professor J. F. Hyford; "Line coördinates" by Professor C. E. Wilder.

The following officers were elected for the second semester: Elizabeth Bruschke '22, president; Thomas Stitt '23, vice-president; Esther Eisler '22, secretary; Margaret Furrey, assistant in Mathematics, treasurer; Dr. Curtis, faculty adviser.

During the second semester the following addresses were delivered: "Astronomical surveying" by Professor P. Fox; "Computing machines" by Dr. I. Roman, instructor; "Things mathematical" by Dr. A. J. Snow, instructor in Psychology; "Applications of mathematics to chemistry" by Professor W. J. Evans, of the Chemistry Department; "Mathematics in Ancient Central America" by Mr. Sidney Huguenin, assistant; "Mathematics according to scientists and philosophers" by Mr. Theodore Doll, instructor.

The Club gave a Beach Party on May 20, 1922.

(Report by Miss Bruschke.)

WHITE MATHEMATICS CLUB, UNIVERSITY OF KENTUCKY, Lexington, Ky.
[*1921*, 389.]

March 9, 1921: "Magic squares" by Dewey Duncan '22.

March 16: "Early mathematical manuscripts of Leibnitz" by Mr. W. E. Payne, instructor.

March 30: "Differential equations from the Lie viewpoint" by Walter Armentrout, Gr.

April 6: "Mechanical devices for integrating differential equations of certain types" by Professor J. M. Davis.

April 13: "Mathematical fallacies" by Nelson Conkwright, Gr.

April 27: "Some applications of vector analysis to the theory of twisted curves" by Professor E. L. Rees.

May 25: "Some applications of mathematics to chemistry" by Eger Murphree, Gr.

October 18: The following officers were elected: President, Professor Flora LeStourgeon; secretary, Professor H. H. Downing.

November 1: "Relating to definitions, axioms, postulates, and assumptions" by Dewey Duncan '22.

November 15: "Class and discrete sequences" by Mr. W. J. Brezler, instructor.

November 29: "Time and its measurement" by Professor Downing.

December 15: "Denumerable and non-denumerable classes" by Mr. R. V. Blair, instructor.

January 22, 1922: "Vector treatment of certain plane concurrences" by Professor Rees.

February 10: "Why is it impossible to trisect an angle?" by Professor J. M. Davis.

February 23: "The real positive number system" by Mr. G. A. Seubert, instructor.

March 9: "How to read secret messages" by Professor P. P. Boyd.

March 24: "Applications of inversion to geometrical constructions" by Nelson Conkwright, Gr.

April 6: "Riemann surfaces for the function $w = z^3 + 3z$" by Vada Nelson, Gr.

April 20: "Van der Waal's and related equations" by Castle Foard, Gr.

May 4: "Flatland" by Helen McGurk '23.

May 18: "Some applications of complex variables to hydrodynamics" by Leland Snoddy, Gr.

       (Report by Professor Downing.)

PI MU EPSILON, UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.
[1922, 79.]

In the fall of 1921, a chapter of Pi Mu Epsilon, the honorary mathematical fraternity, was established at the University of Pennsylvania, taking the place of "The Vinculum." The following officers were elected: Director, Professor E. S. Crawley; vice-director, Dr. J. Minnick; secretary, Ella Rosentoor '22; treasurer, Esther Bernstein '23; librarian, Mabel Kessler '22; executive committee, the officers, Thomas Benton '23, and Edward Weyl '23; scholarship committee, Professor F. H. Safford, Professor H. H. Mitchell, Thomas Benton '23, Marion Bromily '22 and Louisa Lotz '22.

The following papers were presented:

November 18, 1921: "The numbers of Bernoulli" by Thomas Benton '23.

December 16: "The area under the equilateral hyperbola" by Professor M. J. Babb.

January 20, 1922: "The solution of the inverse function" by Perry Caris, Gr.; "Problems in the theory of numbers" by Professor Crawley.

February 17: "The circulating decimal" by Enos Witmer, Gr.

March 17: "The new Thorndike tests" by Professor Mitchell.

April 21: New members were initiated. The following officers were elected: Director, Professor Crawley; vice-director, Professor Mitchell; secretary, Helen Lotz '23; treasurer, Thomas Benton '23; librarian, Marion Bromily '22; executive committee, the officers, Esther Bernstein '23, and Enos Witmer, Gr.; scholarship committee, Professor Safford, Mr. H. M. Gehman, instructor, Marie Wilhelmi '22, Georgina Yeatman '23, and Tobias Hahn, Gr.

May 19: "Available standard tests and measurements" by Dr. J. T. Rorer, of the William Penn High School for Girls. Discussion was led by Professor G. G. Chambers. This was an open meeting to which all high-school teachers of mathematics were especially invited.

       (Report by Miss Lotz.)

THE PENTAGRAM, University of Texas, Austin, Tex.
[1921, 275.]

The following officers were elected for the year 1921–1922: President, Mary Cook '23; secretary, Lewis Vogelsang '23; faculty adviser, Professor A. A. Bennett. The following papers were presented:

October 20, 1921: "Rules of the game" by Professor Bennett.

November 3: "Science and society" by Professor M. B. Porter; "Magic squares" by Renke Lubben, Gr.

November 17: Social meeting.

December 1: "Logarithms" by Dean H. Y. Benedict; "Euclidean geometry" by Mr. C. M. Cleveland, instructor.

January 18, 1922: "Algebraic equations" by William Whyburn '23; "Mechanics of flying" by Professor H. J. Ettlinger.

February 15: "Squaring a circle" by Carriella Bell '23; "Fallacies of elementary geometry" by Professor R. L. Moore.

March 22: "Vector addition" by Professor J. M. Bryant, of the Department of Electrical Engineering.

April 19: "Life and works of Newton" by Dr. Goldie Horton, instructor.

May 10: "Synthetic methods" by Professor Bennett.

May 18: Sixth annual banquet. Toasts on the advanced courses in mathematics.

       (Report by Mr. Vogelsang.)

The Pascal Circle, Trinity College, Washington, D. C.
[*1920*, 425, 481.]

The officers for the year 1921–1922 were: Honorary president, Professor Marie Cecilia Mangold; president, Mary Kelley '22; vice-president, Martha Crowley '22; secretary, Helen Ormond '23; treasurer, Marguerite Dwyer '24.   The following meetings were held:

October 18, 1921: Business meeting. It was decided that a period of probation of three months be set during which candidates for admission into the circle must maintain high rank in some class in college mathematics.

November 15: "Life and accomplishments of Blaisé Pascal" by Mary Kelley '22; "Number games" by Marie Costello '22.

December 6: Supper party to welcome the new members. An original mathematical entertainment including a one-act comedy "A Trinity Triangle," songs, recitations, toasts, with mathematical terms applicable to each member. Attractive menu cards were designed by Martha Crowley '22.

February 7: "Einstein's laws of gravitation and relativity" by Martha Crowley '22.

March 14: "David Eugene Smith's address on 'Religio Mathematici'" by Elizabeth Herbert '22. Paper folding, and catch problems in algebra.

April 4: "Short methods" by Professor Mangold. Discussion of "The clock problem" and "The age problem."

May 2: "The computation of the calendar, with special reference to Easter as an immovable feast" by Carol O'Brien '22.

May 29: The following officers were elected for the year 1922–1923: President, Margaret Kelly '23; vice-president, Margaret McAuliffe '23; secretary, Agnes Perrot '24; treasurer, Anna Foley '25.

(Reported by Miss Kelley.)

The Mathematics Club of Wellesley College, Wellesley, Mass.

The Mathematics Club of Wellesley College was started in the spring of 1921, with membership limited to the members of the junior and senior classes taking elective mathematics. The following officers were elected for the ensuing year: President, Mary Hankinson '22; vice-president, Margaret Merrell '22; member of the executive committee, Hope Anglemann '22. On October 14, the following officers were elected from the junior class: Secretary-treasurer, Mary Wheeler '23; member of the executive committee, Margaret Ingraham '23. Plans for the year were discussed; and Professor Helen Merrill told the Club about the meetings of the American Mathematical Society and the Mathematical Association of America, held in Wellesley in September.

The programs of the other meetings were as follows:

November 18, 1921: "The angle bisector and the use of two right angles in the solution of the cubic" by Miss Marion Stark, instructor; "Paradromic rings" by Eleanor Johnson '23; "How to draw a straight line" by Margaret Merrell '22; "Mechanical construction of the conics" by Grace Lybrand '23; "Russian peasant method of calculation" by Georgia Gambrill '22.

December 2: "Early days in the Mathematics Department" by Miss Ellen Hayes, formerly head of the Mathematics Department.

January 27, 1922: "The cycloid" by Professor J. L. Coolidge, of Harvard University. Open meeting.

February 24: Library meeting. Old and valuable mathematical books were exhibited.

March 17: "Stephen Leacock" by Mary Wheeler '23; "Lewis Carroll" by Jeannette Gruener '23; "π" by Mary Hankinson '22.

May 8: Social meeting at the home of Professors Smith and Copeland. Fallacies proven and disproven, original songs, refreshments.

May 19: "Paper-folding, with demonstration" by Edith Barrows '22. Officers for the year 1922–1923 were elected as follows: President, Mary Wheeler '23; vice-president, Alice Darnell '23; executive committee, Jeannette Gruener '23, Professor Smith.

(Report by Mary Wheeler.)